REMARKS

Please reconsider the application in view of the following remarks. Applicants thank the Examiner for indicating the acceptance of the formal drawings filed on September 30, 2003, and for carefully considering this application.

Disposition of Claims

Claims 1-8, 11, 15-19, 21-25, and 28 were pending in the present application. By way of this submission, claims 6, 7, 16, 17, 21, 23, and 24 are cancelled without prejudice or disclaimer. Also by way of this submission, claims 31-39 are added. Accordingly, claims 1-5, 8, 11, 15, 18, 19, 22, 25, 28, and 31-39 are pending in the present application. Claims 1, 11, 25, and 28 are independent. The remaining claims depend, either directly or indirectly, from claims 1, 11, and 25.

Claim Amendments

Claims 1, 2, 8, 11, 19, 22, 25, and 28 have been amended to clarify the invention. Applicants respectfully assert no new matter has been introduced by way of these amendments as support for these amendments may be found, for example, in Figure 4, and in paragraphs [0037] – [0039] of the originally filed application.

Rejections under 35 U.S.C. § 101

Claims 1-8 and 28 stand rejected under 35 U.S.C. §101 as being directed towards non-statutory subject matter. Specifically, the Examiner asserts claims 1-8 and 28 are directed to software *per se*. *See*, Office Action dated October 22, 2007, at page 2. By way of this

submission, claims 6 and 7 are cancelled and thus the rejection is moot as to those claims. As for the remaining claims, for the reasons set forth below, this rejection is respectfully traversed.

Claims 1-8

Amended independent claim 1 is a system claim explicitly reciting the existence and use of a processor (*i.e.,* a hardware component). The mere existence of a processor is a clear indication that amended independent claim 1 is not software *per se*. In other words, the elements of amended independent claim 1 cannot be solely software. Accordingly, Applicants respectfully assert amended independent claim 1 is directed towards statutory subject matter. Claims 2-5 and 8 depend, either directly or indirectly, from independent claim 1, and are directed towards statutory subject matter for at least the same reason. Accordingly, withdrawal of this rejection is respectfully requested.

Claim 28

Where means plus function language is used to define the characteristics of a machine or manufacture invention, such language must be interpreted to read on only the structures or materials disclosed in the specification and "equivalents thereof" that correspond to the recited function. Two *en banc* decisions of the Federal Circuit have made clear that the USPTO is to interpret means plus function language according to 35 U.S.C. §112, sixth paragraph. *In re Donaldson*, 16 F.3d 1189, 1193, 29 USPQ2d 1845, 1848 (Fed. Cir. 1994) (*en banc*); *In re Alappat*, 33 F.3d 1526, 1540, 31 USPQ2d 1545, 1554 (Fed. Cir. 1994) (*en banc*). *See*, MPEP §2106.

Applicants respectfully assert independent claim 28 is a means plus function claim and that the originally filed specification explicitly discloses at least a processor for performing the functions of independent claim 28. *See, e.g.,* Figure 3 and paragraph [0030] of the originally filed specification. Accordingly, Applicants respectfully assert that the Examiner must give the

means plus function limitations of independent claim 28 their broadest reasonable interpretation consistent with **all** corresponding structures described in the specification (*e.g.*, a processor) and their equivalents. A processor is a well known computer hardware component. By asserting independent claim 28 is directed towards software *per se*, the Examiner is effectively excluding processors from performing the claimed limitations, which is improper. Instead, the Examiner's interpretation must be consistent with at least processors. Accordingly, any proper interpretation of independent claim 28 will include processors. Thus, claim 28 is not directly solely to software and withdrawal of this rejection is respectfully requested.

Rejections under 35 U.S.C. § 103

Claims 1-5, 7-8, 11, 14-16, 18, 19, 21-25, and 28 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,141,630 (hereinafter "McNamara") in view of U.S. Patent No. 6,871,298 (hereinafter "Cavanaugh"). Claim 14 was cancelled in a prior response and thus the rejection is moot as to claim 14. By way of this submission, claims 7, 16, 21, 23, and 24 are cancelled and thus the rejection is moot as to those claims. As for the remaining claims, for the reasons set forth below, this rejection is respectfully traversed.

MPEP § 2143 states that "[t]he key to supporting any rejection under 35 U.S.C. 103 is the clear articulation of the reason(s) why the claimed invention would have been obvious. The Supreme Court in *KSR* noted that the analysis supporting a rejection under 35 U.S.C. 103 should be made explicit." In the Office Action dated October 22, 2007, the Examiner, in articulating the analysis used to reject the claims under 35 U.S.C. §103, has described the various claimed elements taught and not taught by McNamara. *See*, Office Action dated October 22, 2007, at pages 3-7. Further, the Examiner has described the various claimed elements taught by Cavanaugh, which are not taught by McNamara. *Id.* The Examiner then

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concludes by asserting that "it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of McNamara to include the teaching of Cavanaugh ..." *Id.*

Using the above rationale, the Examiner "must articulate the following: (1) a finding that the prior art included each element claimed, although not necessarily in a single prior art reference, with the only difference between the claimed invention and the prior art being the lack of actual combination of the elements in a single prior art reference". *See,* MPEP §2143(A). Applicant respectfully submits that the Examiner has failed to do so.

It is explicitly clear that amended independent claim 1 requires, at least: (*i*) a first implementation and a second implementation of a circuit design exist; (*ii*) two simulation images be compiled from the two implementations (*i.e.,* one simulation image per implementation); (*iii*) the two simulation images be simulated with different simulators, a reference simulator generating golden data and a test simulator generating test data; (*iv*) a mapping rule of a plurality of mapping rules be used to identify a portion of the golden data corresponding to a portion of the test data; (*v*) the plurality of mapping rules map an internal hierarchy of he first implementation to the internal hierarchy of the second implementation; and (*vi*) the portion of the golden data be compared with the portion of the test data for debugging purposes. Amended independent claims 11, 25, and 28 recite similar limitations.

The Examiner admits McNamara does not teach or suggest the mapping rules as recited by the amended independent claims. *See,* Office Action dated October 22, 2007, at page 3. Accordingly, McNamara cannot satisfy at least requirements (*iv*) and (*v*) of the amended independent claims. Instead, the Examiner relies on Cavanaugh to teach or suggest what McNamara lacks. In fact, the Examiner contends that Cavanaugh discloses the existence and use

of mapping rules (*i.e.,* instruction grouping rules). *See,* Office Action dated October 22, 2007, at pages 4 and 8; and Interview Summary dated July 27, 2007, at page 3. Applicants respectfully assert that in order for the Examiner to make these contentions, the Examiner is either mischaracterizing the prior art, or reading the claims overly broadly, both of which are wholly improper.

Cavanaugh discloses a test generator for testing very long instruction word (VLIW) processor systems. In Cavanaugh's test generator, a user first generates a list of instructions to be tested, and then an instruction packer creates a VLIW comprising two or more instructions from the list for execution in parallel. The instruction packer selects the two or more instructions based upon Cavanaugh's mapping rules (*i.e.,* instruction grouping rules). The mapping rules, as disclosed by Cavanaugh, are dictated by the architecture of the processor under test. *See*, Cavanaugh at column 3, lines 60-67; column 4, lines 1-22; and column 8, lines 19-41.

In other words, Cavanaugh's mapping rules effectively provide a manner to map instructions from a list of instructions into groups of two or more instructions for parallel execution. As neither a list of instructions nor a group of instructions for parallel execution are equivalent to a circuit design implementation, the mapping rules disclosed by Cavanaugh cannot be used for mapping the internal hierarchy of a first circuit design implementation with the internal hierarchy of a second circuit design implementation. In other words, Cavanaugh, like McNamara, does not satisfy at least requirement (*v*) of the amended independent claims. In addition, as neither a list of instructions nor a group of instructions for parallel execution are equivalent to the output of multiple simulators (*i.e.,* golden data, test data), the mapping rules disclosed by Cavanaugh cannot be used to link the multiple results generated by the simulators.

In other words, Cavanaugh, like McNamara, does not satisfy requirement (*iv*) of the amended independent claims. Thus, instruction grouping rules, as disclosed by Cavanaugh, are not and cannot be the same as the mapping rules, as recited by the amended independent claims.

In view of the above, McNamara and Cavanaugh, whether viewed separately or in combination, fail to teach or suggest each and every limitation of amended independent claims 1, 11, 25, and 28. Thus, the Examiner's contentions do not support the rejection of amended independent claims 1, 11, 25, and 28. Claims 2-5, 8, 15, 18, 19, and 22 depend, either directly or indirectly, from claims 1, 11, and 25. Accordingly, the Examiner's contentions also do not support the rejections of claims 2-5, 8, 15, 18, 19, and 22, and thus withdrawal of this rejection is respectfully requested.

Claims 6 and 17 stand rejected under 35 U.S.C. §103(a) as being unpatentable over McNamara in view of Cavanaugh and in further view of U.S. Patent No. 6,866,145 (hereinafter "Davidson"). By way of this submission, claims 6 and 17 are cancelled and thus the rejection is moot as to those claims. Accordingly, withdrawal of this rejection is respectfully requested.

New Claims

By way of this submission, claims 31-39 have been added. Applicant respectfully asserts no new matter has been added by way of these new claims as support for these new claims may be found, for example, in paragraphs [0043] and [0045] of the originally filed specification. As discussed above, the Examiner's contentions do not support the rejection of amended independent claims 1, 11, and 25. Thus, amended independent claims 1, 11, 25 are allowable. New claims 31-39 depend directly from amended independent claims 1, 11, and 25 and are allowable for at least the same reasons.

Conclusion

        Applicants believe this reply is fully responsive to all outstanding issues and places

this application in condition for allowance. If this belief is incorrect, or other issues arise, the

Examiner is encouraged to contact the undersigned or his associates at the telephone number

listed below. Please apply any charges not covered, or any credits, to Deposit Account 50-0591

(Reference Number 33226/324001; P8928).

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